

ACTION SHEET 36

between

The Power Reactor and Nuclear Fuel Development Corporation of Japan (PNC)

and

The United States Department of Energy (DOE)

for

Conceptual Design of Plutonium Isotopic Measurements for Containers in Advanced MAGB at PFPF (Phase-I)

1. Introduction

Under Article II (Area of Cooperation) of the Agreement between PNC and DOE for Cooperation in Research and Development Concerning Nuclear Material Control and Accounting Measures for Safeguards and Nonproliferation (herein called the "Agreement"), dated September 15, 1993, DOE and PNC undertake to carry out a cooperative effort on conceptual design of plutonium isotopic verification system for advanced material accountancy glove box (A-MAGB) stations at the Plutonium Fuel Production Facility (PFPF) in Japan.

2. Scope of Work

This action sheet provides for conceptual design to develop the high resolution plutonium gamma isotopic systems (HRGS) with mechanical cooling instead of liquid nitrogen cooling for the germanium detectors. These systems will be installed at the locations of the two A-MAGB neutron counting stations located at PFPF.

Specifications and facility specific constraints will be obtained from PFPF and PNC will be consulted to establish the measurement objectives and the preferred approaches. Detector and mechanical cooling equipment options will be evaluated and a joint decision will be made as to the selection of the preferred hardware. Software options including possibility of unattended mode option will be evaluated and selected to meet PNC requirements. The system will be fabricated at Los Alamos along with any needed software development on new Action Sheet(Phase-II). And the completed systems, hardware and software, will be tested at Los Alamos then shipped to PFPF where in-plant calibration and software parameter setup will be also performed on new Action Sheet(Phase-II).

The work performed under this Action Sheet shall be performed at the Los Alamos National Laboratory (LANL) and PNC facilities in accordance with the terms and conditions of the Agreement.

3. Program Management

LANL is responsible for developing the NDA measurement systems. Work to be done is identified in Appendix I and is limited to techniques for nuclear safeguards applications. PNC is responsible for providing design information, operating data, and other information required for completion of the joint studies. Appendix II identifies key personnel working on this project.

DOE and LANL shall work directly with PNC in planning tasks and resolving programmatic and technical questions. LANL shall start by developing and circulating separate work plans with projected milestones for each task and update the work plans with PNC concurrence as work progresses.

LANL shall prepare brief quarterly letter progress reports on each task and circulate them to PNC, DOE, and to other pertinent organizations as requested by PNC.

LANL and PNC shall prepare and present written and oral reports at meetings of the Permanent Coordinating Group (PCG).

4. Fiscal Management

PNC shall make a cash contribution with the sum of \$75,000. in United States dollars to conduct the activities related to the two plutonium isotopic measurement systems at the PFPF as defined in Appendix I of this Action Sheet in the following manner:

- a.) A contribution of \$75,000. in United States dollars shall be due and payable upon receipt of an invoice to be issued in JFY 97 (Japanese Fiscal Year) after the date of signatures of the Action Sheet.

All contributions by PNC shall be due and payable within thirty days of receipt by PNC of an invoice from DOE, subject to availability of appropriated funds to PNC.

DOE shall be responsible for the budget planning and financial management and shall make best efforts to complete the PNC-funded activities in the Appendix I satisfactorily and within the cash contribution by PNC. DOE costs are determined in accordance with DOE's policy for costing work it performs for others as set forth in 10 CFR Part 1009. The total cost to PNC for DOE's performance of work under this Action Sheet shall not, without PNC's prior consent, exceed the contributions set forth above.

DOE shall not begin or carry out work prior to entry into force of the Agreement and Action Sheet and receipt of the required payment in advance. Work shall not be continued after funds from PNC have been depleted.

Throughout the duration of work under this Action Sheet, PNC shall provide sufficient funds in advance to reimburse DOE for causing LANL to perform the work described in this Action Sheet, and DOE shall have no obligation to perform in the absence of adequate advance funds. Payment in advance from PNC shall be sufficient to cover the expected obligation and cash requirements of the work until a subsequent request for payment in advance can be made, collected, and recorded. In this regard, sufficient advance funds shall be provided to maintain, at a minimum, a continuous 90-days advance of funds for expected DOE fund requirements during the life of this Action Sheet. Advances shall be sufficient to cover expected termination costs that DOE would incur on behalf of PNC.

5. Duration and Termination

This Action Sheet shall enter into force upon the later date of signature and shall continue in force for seven months period. In case all activities under this Action Sheet are not completed in the designated period above, the Action Sheet can be extended by consent of both parties.

For the Power Reactor and Nuclear Fuel
Development Corporation of Japan

For the United States
Department of Energy

Signature: 

Signature: 

Yoshiaki Himeno
Printed Director

Printed

Name: International Division

Name: Kenneth E. Sanders

Title: _____

Director, International
Title: Safeguards Division

Date: March 6, 1998

Date: 13 March 1998

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APPENDIX I

Development of Plutonium Isotopic Measurements of Containers in Advanced MAGB at PFPF (Phase-I)

I. Study Outline

This action sheet involves the development and installation of plutonium isotopic measurement systems in PFPF. The study outline is as follows:

- 1) LANL will obtain facility specifications and constraints from PNC.
- 2) LANL will evaluate the detector and cooling options for the measurements.
- 3) LANL and PNC will review the hardware options being considered and select one.
- 4) LANL will evaluate the software options to meet PNC requirements.
- 5) LANL and PNC will review the software options being considered and select one.

2. Sites

This work will be conducted at:

Los Alamos National Laboratory
Los Alamos, New Mexico, USA

and

Power Reactor and Nuclear Fuel
Development Corporation
Tokai, Japan

3. Programmatic Responsibilities

LANL will be responsible for providing best efforts within the funding and schedule for the feasibility study. PNC will be responsible for facility specific specifications and constraints. As more detailed program plans are developed, specific responsibilities will be better defined and delineated.

4. Schedule

This schedule will be followed on a best-effort basis commencing on receipt of funding and availability of parts.

ID	Task Name	1998		
		Qrt 1	Qrt 2	Q r t 3
Action Sheet 36 –Isotopics for A-MAGB				
1	Facility specifications and constraints -PNC			
2	Evaluation hardware options –LANL			
3	Review hardware options –LANL/PNC			
4	Evaluation software options –LANL			
5	Review software options –LANL/PNC			

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APPENDIX II

Development of Plutonium Isotopic Measurements of Containers in Advanced MAGB at PFPP (Phase-I)

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